

## Claims

### I Claim:

1. A pressure balancing cartridge for use in a mixing valve, and the pressure balancing cartridge comprising a casing, a sleeve within the casing, and a reciprocating balancing spool within the sleeve, the improvement comprising:

the sleeve and spool being molded of a very high temperature ultra lubricated plastic resin.

2. The cartridge of claim 1 wherein the preferred plastic resin is a PTFE compound.

3. A pressure balancing cartridge for use in a mixing valve, the cartridge comprising at least a casing, a sleeve within the casing, a metal stem engaged within one end of the sleeve, and a reciprocating balancing spool within the sleeve, the improvement comprising:

a biasing spring inserted between the stem and the top end of the balancing spool to protect the spool from "water shock" effect and to mechanically shear away and mechanically digest any contaminant deposits in the area of the spring.

4. The cartridge of claim 3 wherein the spring biases the balancing spool away from the stem.

5. A pressure balancing cartridge for use in a mixing valve the cartridge comprising at least a casing, a sleeve within the casing, a metal stem engaged within one end of the sleeve, and a reciprocating balancing spool within the sleeve, the improvement

comprising:

the sleeve and spool being molded of a very high temperature ultra lubricated resin or plastic; and

a biasing spring inserted between the stem and an end of the balancing spool adjacent the stem.

6. The cartridge of claim 5 wherein the preferred resin is one which is ultra lubricitous and very high temperature.

7. The cartridge of claim 5 wherein the spring biases the balancing spool away from the stem.

8. A pressure balancing cartridge for use in a mixing valve, the cartridge comprising at least a casing, a sleeve within the casing having a reciprocating balancing spool within the sleeve; the improvement comprising:

the sleeve being made of a very high temperature ultra lubricitous plastic resin.

9. The cartridge of claim 8 wherein the plastic resin is preferably a PTFE compound.

10. A pressure balancing cartridge for use in a mixing valve, the cartridge comprising at least a sleeve having a reciprocating balancing spool within the sleeve; the improvement comprising:

the spool being made of a very high temperature ultra lubricitous plastic resin.

11. The cartridge of claim 10 wherein the plastic resin is preferably a PTFE compound.

12. A pressure balancing cartridge comprising at least a casing, a sleeve within the casing, a metal stem engaged within one

end of the sleeve, and a reciprocating balancing spool within the sleeve, the improvement comprising:

the sleeve being molded of a very high temperature ultra lubricated resin or plastic; and

a biasing spring inserted between the stem and an end of the balancing spool adjacent the stem.

13. A pressure balancing cartridge comprising at least a casing, a sleeve within the casing, a metal stem engaged within one end of the sleeve, and a reciprocating balancing spool within the spool, the improvement comprising:

the spool being molded of a very high temperature ultra lubricated resin or plastic; and

a biasing spring inserted between the stem and an end of the balancing spool adjacent the stem.